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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,393	08/21/2006	Masami Kishiro	1503.75736	8709

24978 7590 11/28/2007

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EXAMINER	
THOMPSON, JEWEL VERGIE	
ART UNIT	**PAPER NUMBER**
2855	

MAIL DATE	DELIVERY MODE
11/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/590,393	KISHIRO ET AL.	
	Examiner	Art Unit	
	Jewel V. Thompson	2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-18 is/are pending in the application.

4a) Of the above claim(s) 1 and 2 is/are withdrawn from consideration.

5)☒ Claim(s) 3-7 and 15-18 is/are allowed.

6)☒ Claim(s) 8,10 and 11 is/are rejected.

7)☒ Claim(s) 9.12,10.12,11.12,12.12,13.12 and 14 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 21 August 2006 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Jewel V Thompson

JEWEL THOMPSON
PRIMARY EXAMINER

11/25/07

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 8/23/06.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. Acknowledgement is made of the Information Disclosure Statement filed August 21, 2006, which has been made record of and placed in the file.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Fig. 1A and fig. 2A. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Kohno et al (4,271,708)

Regarding claim 8, Lang et al teaches an ultrasonic flow rate measurement method for measuring a flow rate of a fluid within a pipe by using an ultrasonic wave, measuring a flow rate by a plurality of flow rate measurement units, which uses mutually different measurement principles, sharing a plurality of transducer units, each of which, being mounted onto the pipe, carries out an interconversion between an acoustic signal and an electric signal, and changing over a connection of the transducer unit for each of the flow rate measurement units (col. 10, lines 43-54).

4. Claim 11 is rejected under 35 U.S.C. 102(b) as being anticipated by Lowell et al (5,228,347)

Regarding claim 11, Lowell et al teaches an ultrasonic flow rate meter capable of measuring a flow rate by a pulse Doppler method and a transit time method simultaneously in parallel by comprising: at least one pair of electric/ultrasonic transducers necessary for measuring a flow rate by a transit time method (col. 3,lines 12-26); a hardware unit for providing at least one pair of electric/ultrasonic transducers with a pulse signal necessary for measuring a flow rate by the pulse Doppler method and necessary for measuring a flow rate by the transit time method (fig. 1); a detection circuit for detecting a Doppler frequency shift from a received signal obtained from a

discretionary transducer including the one pair of electric/ultrasonic transducers (col. 3, lines 19-26 and col. 6, lines 50-64); a conversion circuit for amplifying and analog/digital-converting a first received signal obtained by an ultrasonic pulse transmission from the upstream to the downstream, and a second received signal obtained by an ultrasonic pulse transmission from the downstream to the upstream, both by the one pair of electric/ultrasonic transducers; and a control unit for calculating a flow rate from the detected Doppler frequency shift by the pulse Doppler method and also a flow rate from the output of the conversion circuit by the transit time method fig. 5B).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kohno et al (4,721,708) in view of Feller (6,457,371).

Regarding claim 10, Kohno et al fails to teach a plurality of the flow rate measurement units which includes a first flow rate measurement unit for detecting a flow rate of a fluid within the pipe by using a transit time method and a second flow rate measurement unit for detecting a flow rate of the fluid within the pipe by using a pulse Doppler method; and the steps of placing the first and second transducer units on the

same side of the pipe and at mutually separated positions in the flow direction of the fluid, the first flow rate measurement unit measuring a flow rate of the fluid by measuring a time difference of a propagation time of an acoustic signal transmitted by the first transducer unit, reflected by the wall of the pipe and received by the second transducer unit from that of an acoustic signal transmitted by the second transducer unit, reflected by the wall of the pipe and received by the first transducer unit, and the second flow rate measurement unit calculating a flow velocity profile in the axial direction of the pipe based on the difference of a velocity distribution to the wall of the pipe measured by each of the first and second transducer units. Feller teaches in col. 1, lines 55- col. 2, lines 35 a second transducer located downstream of the first transducer, the second transducer transmits a burst of acoustic energy received by the first transducer. It would have been obvious to one of ordinary skill in the art at the time that the invention was made to have used the transducers positioned as that of Feller in the apparatus of Kohno et al for the purpose of detecting phase differences between signal of the two transducers.

Allowable Subject Matter

6. Claims 9, 1-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 3-7 and 15-18 are allowed.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6,474,174 Su teaches an ultrasonic flow a rate measuring method of measuring an inner diameter of a pipe.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jewel V. Thompson whose telephone number is 571-272-2189. The examiner can normally be reached on 7-4:30, telework on Wednesday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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PRIMARY EXAMINER
11/25/07

jvt
November 25, 2007